Before the

Federal Communications Commission

Washington, DC 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 97 of the	)	ET Docket No. 02-98
Commission's Rules to Create a Low	)	
Frequency allocation for the Amateur	)	RM-9404
Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Regarding an	)	RM10209
Allocation of a Band near 5 MHz for the	)	
Amateur Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Concerning the Use	)	RM-9949
Of the 2400-2402 MHz Band by the	)	
Amateur and Amateur-Satellite Services	)	

COMMENTS OF

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Executive Summary

CQ Communications Inc., a leading publisher in amateur radio, generally supports the proposals in ET Docket 02-98. Regarding the LF proposal (135.7-137.8 kHz), we would open the band to all amateurs with General Class or higher licenses, would not implement mode restrictions and would make technical requirements flexible enough to encourage a wide range of experimentation.

On 60 meters (5,250-5,400 kHz), we strongly support creation of the allocation; propose that full amateur power be permitted; would not recommend sub-banding, either by mode or by license class; and would open the band to all amateurs with HF privileges, including CW privileges for those holding Novice Class licenses or Technician licenses with code credit.

We also strongly support the proposal to make the Amateur Service primary on 2400-2402 MHz, but are very concerned that the Commission appears to be placing the interests of non-licensed users of this band, at a minimum, on par with the interests of licensed users. We ask the Commission to reaffirm its long-standing policy that the interests of licensed operators / services are primary on any frequencies shared by licensed and non-licensed users.

I. Introduction

1. CQ Communications Inc. is a leading publisher of magazines, books and videos for the amateur radio and general hobby radio markets. Our amateur radio periodicals include *CQ Amateur Radio* and *CQ VHF* magazines. *CQ Amateur Radio* is the leading independent amateur radio magazine in the United States, in continuous monthly publication since 1945. *CQ VHF* is dedicated to serving the interests of amateurs whose main operating interests lie above 50 MHz. In addition, CQ publishes *Popular Communications*, a general interest magazine for radio hobbyists, plus a full line of amateur radio-related books and videotapes. The company is headquartered in Hicksville, New York.

2. We strongly support the three main proposals set forth in the instant Notice of Proposed Rule Making and urge the Commission to act promptly on approving and implementing these new bands for the Amateur Service. We would like to offer some comments on specific parts of the proposals, particularly in response to those areas in which the Commission has specifically requested guidance from the amateur community.

II. 135.7-137.8 kHz

3. In 1912, amateurs were prohibited from operating on wavelengths greater than 200 meters (frequencies below approximately 1500 kHz), being consigned to the "useless" shortwave and higher frequencies. As a result, amateurs were among the first to discover and learn how to exploit the worldwide communications capabilities of the shortwave spectrum. Likewise, amateurs operating in the VHF and UHF portions of the spectrum were among the first to discover that propagation on these frequencies was not

necessarily limited to line-of-sight paths as had been commonly assumed. Amateurs continue pioneering efforts in the areas of satellite, meteor-scatter and Earth-Moon-Earth communications on these frequencies. At the low end of our current allocations, amateurs operating on 160 meters (1.8-2.0 MHz) continue learning about long-distance propagation at these frequencies and sharing their knowledge with the radio communication community.

4. In recent years, amateurs in Europe and Canada have been given access to frequencies in the 100-200 kHz range for experimentation and communication, due to the migration of previous users to other frequencies. They have made significant progress, including transatlantic transmissions. Hams in the United States, however, have been denied access to the LF spectrum due to a 90-year-old policy limiting amateurs to "200 Meters and Down."

5. Now, for the first time in nine decades, U.S. amateurs are being offered the opportunity to operate on at least a sliver of LF spectrum and to join their Canadian and European counterparts in exploring the possibilities these frequencies may hold (including those which prevailing wisdom has deemed impossible). We strongly support this proposal, although an allocation of more than 2.1 kHz might be more successful in promoting experimentation.

6. We agree with the Commission that it is wise to harmonize the U.S. allocation and technical standards with those already adopted by Canada and proposed by Canada for a hemispheric Region II allocation for possible consideration at the 2003 World Radiocommunication Conference (WRC-03). We urge the Commission to include support for this proposal in its recommendations for United States positions at WRC-03. However, we also believe it is important to set standards that will ensure the greatest degree of flexibility for amateur experimentation and harmony with standards being established in other parts of the world as well.

7. The Commission proposes permitting CW, RTTY, and Data emission modes at 135 kHz, with a maximum bandwidth of 100 Hz. We note that at least one commenter in this proceeding, Holger Kinzel[1], having practical experience with operating in Europe on 135 kHz, feels that 100 Hz bandwidth is insufficient for some of the modes proposed for use on the band. In addition, while the Commission assumes in its Notice that "amateur radio operations (in this band) may be limited to propagation experiments, telegraphy and low speed data transmissions,"[2] Kinzel points out that, with the somewhat greater bandwidth available on the band in Germany (800 Hz), he and another amateur have developed a means of transmitting voice within that narrow bandwidth. Advances in digital voice compression technology may open additional possibilities. This is exactly the sort of experimentation that the Commission ought to be promoting for amateurs in the United States as well. We urge the Commission not to limit the scope of that experimentation by limiting modes to those assumed to "fit" within a specific bandwidth,

[1] See comments of Holger 'Geri' Kinzel, DK8KW/W1KW
[2] NPRM, Paragraph 25

or by setting a bandwidth that will not be compatible with that of other countries, so that American amateurs may participate fully in experimentation on this band. Kinzel recommends a bandwidth of at least 400 Hz. We urge the Commission to examine the bandwidths authorized for amateur operations in European countries as well as Canada, and to set standards that will provide American amateurs with the greatest flexibility in experimentation and communication.

8. Furthermore, we propose that all modes -- CW, voice, image, RTTY and data -- be permitted on this band, as long as signals comply with the bandwidth standards that are established.

9. We agree with the Commission that sharing between amateurs and primary users, such as power line control (PLC) systems, will likely be successful. As the Commission has pointed out, amateurs have successfully shared spectrum with other users for many years on frequency bands throughout the spectrum. While we agree that giving amateurs access to the United Telecom Council's (UTC) database of current PLC operations would promote the most effective use of this spectrum as proposed in the Notice[3], we also agree with UTC's concerns[4] over national security matters that may arise from public disclosure of certain system information. A different means of coordination must be established. We would propose that an amateur organization, perhaps the ARRL, maintain a database of amateurs who are active on the 135 kHz band (we would not expect an overwhelming number of amateurs to be active on this band as it requires a significantly higher than average level of technical expertise), and make that information available to UTC or its members in the unlikely event of interference problems. We would strongly oppose any requirement that amateurs receive permission from primary users before being allowed to transmit on this band. Our experience with such an arrangement with AMTS stations on 219-220 MHz has been that the primary users have routinely denied this permission, resulting in not a single amateur station being authorized to operate in this segment.

10. Finally with regard to the LF portion of this proposal, we encourage the Commission to revisit the 160-190 kHz allocation proposed by the ARRL after a sufficient period of time has elapsed (such as 2-3 years) to assess the success of sharing at 137 kHz.

III. 5250-5400 kHz

11. We strongly support the Commission's proposal to create a new amateur allocation at 5250-5400 kHz, for all of the reasons set forth in the ARRL's petition[5]. We agree that there are times when propagation conditions make communications difficult if not impossible on both the 3.5 and 7 MHz amateur bands and that an additional allocation at 5 MHz will "fill the gap."

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[3] NPRM, Paragraph 28
[4] See UTC Notice of Oral Ex Parte Communication, May 30, 2002
[5] See RM-10209

12. In addition, we are very cognizant of the ongoing interference problems on 7 MHz between amateurs in ITU Region 2 and broadcasters in Regions 1 and 3. While we are hopeful that WRC-03 can succeed in creating a harmonized worldwide amateur allocation at 7 MHz, we recognize that this process will require a difficult balancing of competing interests among several radio services and that, even if agreement is reached at WRC-03, implementation is likely to be phased in over a period of several years. Having an additional allocation at 5 MHz will help ease congestion, and thus interference, on 7 MHz.

13. The Commission seeks input from the amateur community on power limits, license class access and possible sub-bands for specific modes within the 5250-5400 kHz allocation. Several commenters so far have called for power limits below the 1500 watts PEP permitted on most other amateur bands, and they seem to be split (as of this writing) over the advisability of subbands. There does seem to be a consensus that this band should be available in its entirety to all amateurs holding General Class or higher licenses.

14. We agree with the ARRL and the Commission that standard amateur power levels should apply to this band. We see no valid reason for restricting power to lower levels, such as the 100-watt or 200-watt maximum proposed by some commenters. Current rules limit power output to the minimum necessary to maintain communications, and we believe this will be as effective on 60 meters as it is on other bands.

15. We concur that there should be no license class sub-banding, and go a step further, recommending that the band should be open to all amateurs holding HF operating privileges. Current rules permit CW operation by Novices and Technician Class amateurs with code credit on both 80 and 40 meters, so they are equally affected by the propagation and interference problems that make this allocation desirable. We propose granting CW privileges on the 60-meter band to all amateurs qualified for HF operation, with voice and data privileges restricted to those holding General Class or higher licenses. We would not object to granting data privileges to all HF-qualified amateurs as well, but feel this is a matter for another rulemaking. Rather, we simply propose extending the *status quo* on 80 and 40 meters to 60 meters as well.

16. We also agree with ARRL that there should not be sub-banding by mode. We are entering a new technological era in which our current definitions of "modes" are quickly becoming muddied if not completely outmoded. We recently reviewed in *CQ* the first commercially-produced amateur transceiver featuring digital audio, in which we pointed out that digital audio challenges traditional mode definitions [6]. What goes into the microphone and comes out of the speaker is voice, yet the signal that is transmitted over the air is a digital bitstream. Is this voice or data? The answer is yes to both, yet it does not fit comfortably into any of the current mode definitions. At some point, the Commission may need to look at redefining its definitions in order to keep pace with

[6] Moseson, Rich, "CQ Reviews: The Alinco DJ-596T Handheld With Digital Voice Option," *CQ Amateur Radio*, June 2002, pp 26-31

advancements in technology, just as the introduction of software defined radios is forcing the Commission to re-examine its equipment certification standards in order to accommodate radios that may have all of their operating parameters reprogrammed in the field.

17. From the perspective of other users sharing a band and hearing a signal on a particular frequency, a digital audio signal will sound no different from a digital data signal or even a digital video signal of the same bandwidth. Whether that signal contains information that will be translated at the receiver into voice, text, or a picture, is of little concern to that operator and should be of no regulatory concern at all. The first new Amateur Service allocation of the 21st century should not be hamstrung by 20th century mode restrictions.

18. Furthermore, the Amateur Service has a long history of self-regulation to complement the Commission's basic technical and operating rules. Voluntary band planning has been successful in most instances and is far more easily adaptable to new modes and activities than are regulations. We believe that voluntary band planning will be successful on 60 meters and will provide the flexibility needed to accommodate future advances in technology.

19. Should the Commission wish to separate narrow- and wide-bandwidth modes, we recommend that it impose bandwidth restrictions only, and permit the use of any mode that meets the bandwidth requirements. The amateur community will then be responsible -- via voluntary band planning -- for sorting out which mode should go where. (Again, our primary recommendation is for no sub-banding at all.)

20. In summary, we strongly support the establishment of a new 60-meter amateur band at 5250-5400 kHz. We believe this band should be open to all amateurs with HF privileges (as explained in paragraph 15 above), with standard amateur power limits and no regulatory mode restrictions.

IV. 2400-2402 MHz

21. We fully support the Commission's proposal to upgrade the existing amateur allocation at 2400-2402 MHz to primary, and to add a primary allocation in the same segment for the Amateur Satellite Service. However, we are deeply concerned that the Commission appears to be suggesting in its request for comments on this portion of the proceeding that the needs of unlicensed (Part 15) users may take precedence over those of licensed users.

22. The 2400-2402 MHz frequency segment is a small portion of the much larger 13-centimeter band. Amateur allocations on this band include 2300-2310 MHz and 2390-2450 MHz, with the Amateur Service already holding primary status at 2390-2400 and 2402-2417 MHz. There is currently no service holding primary status at 2400-2402 MHz. Upgrading the status of the Amateur Service to primary at 2400-2402 and adding a

primary allocation for the Amateur Satellite Service will accomplish several desirable objectives:

a. It will create a unified subband from 2390-2417 MHz that is allocated to the Amateur Service on primary basis;

b. It will decrease the likelihood of future allocations at the center of the 2390-2417 segment that may be incompatible with the Amateur Service; and most importantly,

c. It will protect the Amateur Satellite Service from incompatible sharing partners and unintentional interference on uplinks to satellites with international coverage.

23. There are currently five amateur satellites using the 2400-2402 MHz band segment[7] and it is likely that future satellites will operate here as well. There is limited spectrum space available in the satellite subbands on lower frequency bands, and such uses as high-speed digital networking via satellite will require large amounts of bandwidth, which are permissible on 2400 MHz but not on some lower frequency bands. Currently, this is one of only two functioning downlink bands for the AMSAT-OSCAR 40 satellite (known prior to launch as Phase IIID), a multinational volunteer effort built and launched at a cost to amateurs of more than $4 million. While this may not seem like a large sum in comparison to the cost of commercial and government satellites, it must be remembered that amateur satellites produce no revenue and receive no taxpayer support. They are built and launched completely at private expense, and operated only for the purposes set forth in the Commission's rules for the Amateur Services.

24. Most unlicensed uses of the 2400 MHz band -- such as cordless telephones and wireless computer networks -- utilize multiple channels and equipment that listens for activity on a given frequency before transmitting. If a frequency is busy, the devices automatically seek out a vacant frequency from among several choices, usually finding one within one second or less. Amateur operations in this frequency range tend to be at the bottom of the range used by these devices (2400-2483 MHz). Thus, in the very unlikely event that a satellite downlink or other amateur signal is occupying one of a Part 15 device's frequencies, there will be several other frequencies from which the device may choose. In addition, with the Amateur Service already holding a primary allocation from 2402-2417 and a secondary allocation from 2400-2402 and 2417-2450 MHz, it is highly unlikely that simply changing the nature of the amateur allocation at 2400-2402 will result in any changes to the number of signals competing for spectrum space with Part 15 devices.

25. We are deeply troubled, however, by the Commission's implication in the Notice that unlicensed users may have any priority at all over licensed users of this or any band. "Because this band is important to unlicensed applications and there is widespread deployment, the removal of such devices would not be feasible," states the NPRM in Paragraph 50, "we request comment on whether the proposed primary amateur and amateur-satellite service allocations would conflict with unlicensed use of the band."

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[7] See NPRM, Footnote 109

26. Unlicensed devices have historically been permitted to operate only the basis of 1) not causing interference *to* licensed services, and 2) accepting interference *from* licensed services. It has been central to the philosophy of permitting unlicensed operation that licensed services will always have priority on the use of the bands involved. Irrespective of the fact that we do not believe any conflict would arise from changing the amateur allocation at 2400-2402 MHz from secondary to primary, we are greatly concerned that Commission appears to be placing the needs of unlicensed services on a par with those of licensed services, if not on a higher level.

27. If this is the case, it suggests a sea change in the Commission's view of unlicensed services vis-à-vis licensed services, calls into question the overall value of licensing in the Commission's eyes, and ought to be of concern not only to the Amateur Service but to all other licensed services that share spectrum with unlicensed services. We urge the Commission to clarify its position on sharing between licensed and unlicensed services, to restate its commitment to maintaining the primacy of licensed services on frequencies that are shared with unlicensed services, and its guiding philosophy for unlicensed services that they may not interfere with, and must tolerate interference from, licensed services.

V. Summary

28. In summary, we support all three proposals set forth in the instant Notice -- the creation of new amateur allocations at 135.7-137.8 kHz and 5250-5400 kHz, and the elevation of the amateur allocation at 2400-2402 MHz from secondary to primary, along with a primary amateur-satellite allocation at the same location.

29. We believe that in the interest of experimentation and accommodating new technology, there should be no mode restrictions on either of the new bands, provided that the transmissions meet bandwidth standards - and we believe the bandwidth standards should be such that experimentation with various modes is encouraged.

30. We also believe these bands should be available to as many licensed amateurs as possible, within the constraints of existing international agreements. We believe the 60-meter band should be open to all amateurs whose license privileges include HF, including CW operation for Novices and Technicians with code credit. Due to the greater technical expertise required for operating on 2200 meters, we would limit privileges on that band to General Class or above.

31. Finally, we urge the Commission to reaffirm its commitment to maintaining the proper relationship between licensed and unlicensed services sharing frequencies, and that the interests of unlicensed users of a particular frequency band are secondary to those of all licensed users, along with reaffirming the basic premise that unlicensed operations must tolerate interference *from* licensed operations, and may not cause interference *to* licensed operations.

Respectfully submitted,
CQ Communications Inc., by

Richard A. Ross, President

Richard S. Moseson, Editorial Director

July 22, 2002